

Amendments to the Claims

1. **(Currently Amended)** An optical head comprising:

a light emitting element having in which plurality of light sources ~~are~~ integrally formed, said light sources being ~~able~~ operable to emit beams having different wave lengths from each other ~~to one another~~;

an optical system operable to converge ~~for converging~~ a beam emitted by any one of said light sources of said light emitting element onto an optical information storage medium;

an optical separator operable to separate ~~for separating~~ a reflected beam coming from the said optical information storage medium from the beam coming from said one of said light sources ~~source~~; and

a light receiving element operable to detect ~~for detecting~~ light quantities of the reflected beam separated by said optical separator.

A2 2. **(Currently Amended)** The optical head according to claim 1, wherein said optical separator is operable to separate ~~separates~~ the reflected beam coming from the said optical information storage medium from the beam coming from said one of said light sources ~~source~~ by ~~means of~~ reflection and transmission.

3. **(Currently Amended)** The optical head according to claim 2, wherein an aligning direction of said light sources inclines by about 45 degrees in a rotational direction around an axis of the beam coming from said one of said light source ~~sources based~~ on the basis of a reflection axis of said optical separator.

4. **(Currently Amended)** The optical head according to claim 3, wherein said light receiving element is operable to receive ~~for receiving~~ a zero-order diffracted light, which is located at a central position, and said light receiving element comprises a number ~~is composed~~ of regions of at least a number equal to four times of a number of said light sources, said regions being grouped as ~~composed~~ of region sets each of which includes four of said regions, and each of said region sets being operable

to ~~receive~~ receiving the reflected beam which has been emitted by said one of said light source sources and then reflected by the said optical information storage medium.

5. (Currently Amended) The optical head according to claim 4, wherein said optical separator comprises ~~is composed of~~ a parallel plate.

6. (Currently Amended) The optical head according to claim 1, further comprising an optical element disposed between said light sources and said optical system, said optical element having different ~~which includes two kinds of~~ diffraction gratings ~~grating~~ disposed on front and back portions thereof, wherein depths, pitches, and angles for axes ~~the axis of the~~ beams of said different ~~two kinds of~~ diffraction gratings are different from each other, respectively.

Ar 7. (Currently Amended) An apparatus for storing and reproducing optical information, said apparatus comprising:

a light emitting element having in which a plurality of light sources ~~are~~ integrally formed, said light sources being operable ~~able~~ to emit beams having different wave lengths from each other ~~to one another~~;

an optical system operable to converge ~~for converging~~ a beam emitted by any one of said light sources of said light emitting element onto an optical information storage medium;

an optical separator operable to separate ~~for separating~~ a reflected beam coming from the said optical information storage medium from the beam coming from said one of said light source sources;

a light receiving element operable to detect ~~for detecting~~ light quantities of the reflected beam separated by said optical separator; and

an electric circuit operable to transform ~~for transforming~~ optical signals of ~~detected by~~ said light receiving element to electric signals so as to output signals stored in the said optical information storage medium as the electric signals.

12 8. (Currently Amended) A method of storing and reproducing optical information for in an apparatus for storing and reproducing the optical information with an optical head, the said optical head including: a light emitting element having in which a plurality of light sources are integrally formed, the said light sources being operable able to emit beams having different wave lengths from each other to one another, an optical system operable to converge for converging a beam emitted by any one of the said light sources of the said light emitting element onto an optical information storage medium, an optical separator operable to separate for separating a reflected beam coming from the said optical information storage medium from the beam coming from the one of the said light sources source, and a light receiving element operable to detect for detecting light quantities of the reflected beam separated by the said optical separator, said method comprising the steps of:

identifying a the kind of the said optical information storage medium;

making the said light emitting element emit a the beam having a wave length corresponding to the identified kind of the said optical information storage medium and then converging the beam onto the said optical information storage medium; and

detecting the reflected beam coming from the said optical information storage medium and then outputting signals stored in the said optical information storage medium as electric signals.
